Bumblebees get by with a little help from their honeybee rivals

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Image credit: Wikipedia.

Bumblebees can use cues from their rivals the honeybees to learn where the best food resources are, according to new research from Queen Mary, University of London.

Writing in the journal PLoS ONE, the team from Queen Mary's School of Biological and Chemical Sciences explain how they trained a colony of bumblebees (*Bombus terrestris*) to use cues provided by a different species, the honeybee (*Apis mellifera*), as well as cues provided by fellow bumblebees to locate food resources on artificial flowers.

They found that the bumblebees were able to learn the information from the honeybees just as efficiently as when the information came from their own species, demonstrating that social learning is not a unique

process limited members of the same species.

PhD student Erika Dawson, explains: "Most social learning research has focused on learning between members of the same species. But in the same way that human engineers can pick up useful tricks from animals (such as using bird aerodynamics to design planes), animals might of course learn from different species where the best food is, where predation looms or where the best place to nest can be found.

"We wanted to determine whether animals can use any social cue to enhance their environment, even if they come from another species that share their habitat, resources or predators."

The results show that information learnt from other species can be just as valuable to an animal like the bumblebee as information from their own species. Bees would have opportunities to learn cues from their own species and other species to an equal degree in the wild, as they often share the same flower species as a source of food. This is particularly true for large flowers such as sunflowers, which are often fed from by multiple pollinators simultaneously.

The results also show that competition between the two species may be much more severe than previously assumed, as Erika Dawson explains: "If bumblebees use individual exploration and copying of their fellow bumblebees to identify rewarding plants, but also use the information provided by a rival species (ie honeybees), this could have important ecological implications for community structure and formation, and may help us better understand the impact of competition within natural pollinator communities."

More information: 'Conspecific and Heterospecific Information Use in Bumblebees' was published in the online edition of *PLoS ONE* on Wednesday 8 February 2012.

Provided by Queen Mary, University of London